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ABSTRACT

Traditional freshmen, or first-time students who enter college immediately after graduating high school, represent the largest identifiable group of students within Frederick Community College's (FCC) student body. They are afforded a considerable amount of resources from college staff, and for them the college follows various measurements of college-readiness, academic success, retention, graduation, and transfer success. Often, when members of the community and others unfamiliar with the diverse nature of community college enrollment draw conclusions about the quality of students who attend FCC and the measures of outcomes success, they focus on the aspects of these traditional students. Their success is viewed by many in the community as a vital means of assessing FCC's institutional effectiveness. In order to add to the knowledge base surrounding its traditional freshmen, FCC conducted this three-year longitudinal study on the 494 high school graduates who enrolled for the fall 1994 semester. Its focus was on the relationship between enrollment and successful completion of required developmental courses and retention, attrition, and the attainment of certain measurable outcomes. Contains 52 data tables and eight graphs. (EMH)

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ED 419 568

# Whatever Happened to the Class of 1994?

## A Three-year Longitudinal Study of Traditional Freshmen Entering Frederick Community College In the Fall 1994 Semester

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# Whatever Happened to the Class of 1994?

**A Three-year Longitudinal Study of**
**Traditional Freshmen Entering Frederick Community College**
**In the Fall 1994 Semester**

**Prepared by**
**James M. Holton**
**April, 1998**

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## Executive Summary

Traditional freshmen enroll in and complete required developmental courses at differential rates. Students are much **more likely** to enroll in required developmental **reading and writing** courses and **less likely** to enroll in required developmental **math** courses. Of the students who were assessed as developmental in **reading or writing**, **64%** eventually completed all of their required courses. In contrast, **only 42%** of those students assessed as developmental in **mathematics** eventually completed all of their required developmental courses.

There is little variation in the retention and persistence rates among classes of traditional freshmen from 1982 to 1996. The college can expect slightly over **80%** of freshmen to return for a **second semester**, **65%** for a **third**, and about **55%** for a **fourth**. This study adds information about persistence to a fifth and sixth semester. Nearly **one-third** of freshmen enroll for a **fifth semester** and roughly **one-fourth** enroll for a **sixth semester**, or three full years of attendance.

Only **one out of five** freshmen enrolling in a fall semester earn the **AA degree** or **certificate** within three years. Slightly more than **one-fourth transfer** successfully to a four-year college or university within the same time period. Of those students who transferred, 54 had earned the AA degree prior to transfer. Combined, **38%** of traditional freshmen had either earned the **AA degree** or **transferred** within three years after enrollment.

Very few students earned AA degrees, certificates, or transferred successfully from curriculums other than General Studies, Business Administration, or Teacher Education. Only **12** students (2.5%) earned the **AAS** or **AS** degree. Only **1** student earned a **certificate** in any curriculum (Practical Nursing).

More than one out of every four **(28%)** traditional freshmen experienced a **semester of all grades of F, W, or U. One-half** of the incidence of all grades of F, W, or U occurred in the **first semester of attendance**. Nearly **one out of every five** spent at least one semester on **academic probation**. The phenomenon of experiencing a semester of all grades of F, W, or U is **not** correlated with developmental status. Students with no developmental needs are just as likely to experience a semester of all F's, W's, or U's as a students taking all developmental classes. A completely unsuccessful semester is a relatively universal experience of traditional freshmen.

A small percentage **(5%)** of traditional freshmen participate in **Honors courses**. A larger percentage **(16%)** enrolled in at least one course at FCC while a senior in high school (**Open Campus Program).**

For three core subjects with specific pre-requisites related to performance on the placement tests or successful completion of required developmental courses, a similar pattern was observed. In all three courses examined (**EN 101, first credit math course, and first credit science course**) students who had **no** required developmental requirements earned **higher** average **GPA's** than students who were assessed as having developmental needs.

Students who enroll in and complete required developmental courses are **retained** and **persist** for more semesters at a greater rate than students who have **no** developmental needs or students who **never complete** required developmental courses.

Students who **enroll** in and **complete** required developmental courses have significantly **higher** overall **GPA's** than students who do not complete required developmental courses. Students who complete required developmental writing or math courses earn **higher** overall **GPA's** than the mean GPA for all students.

Students who enroll in and complete required developmental courses earn significantly more **credit hours** than students who do not complete required developmental courses. Students who complete required developmental writing or math courses earn **more** credits than the mean number of credits earned by **all** students. Conversely, students who enroll in, but **do not** complete required developmental courses average fewer than **10** credits earned in three years.

**Completion** of required developmental course work is **positively** associated with **AA degree** attainment and successful **transfer.** While students with **no** developmental needs graduate and transfer at higher rates than students who are required to take developmental courses, those students who enroll in and complete developmental courses **and then go on** to earn substantial numbers of college credits have nearly an **equal chance** of earning the AA degree or transferring. In fact, of those students who earn the AA degree or transfer successfully, the **majority** have enrolled in and have completed at least **one** developmental course. Conversely, students who enroll in, but do not complete required developmental courses rarely transfer and virtually none ever earn the AA degree.

There is a significant difference in the average **GPA** and **credits earned** between students who earn the **AA degree** or **transfer** successfully and those who do not. Students who graduate or transfer attain GPA's of nearly **3.0** and average **55** credits earned. This compares to the overall rates of 2.18 and 32.

There is a significant relationship in developmental course completion among students who are required to take **both** developmental reading **and** writing. Students who are required to take both developmental reading and writing are significantly more likely to complete both than one and not the other. On the other hand, those who fail to complete one are more likely to fail the other. There is a similar significant relationship between developmental writing and developmental math.

It is likely that for a student who is required to take developmental reading and writing, **both courses** will be on the **same level**. However, knowledge of level of developmental reading or writing does not predict level of developmental math.

While **three out of every four** traditional freshmen indicate that "**preparation for transfer to a four-year college or university**" is the primary reason for attendance, **only 37%** of those indicating this goal actually transfer within a three year period after initial enrollment.

Students who participate in the **Open Campus** program and take college courses in their senior year are significantly more likely to earn the **AA degree** or **transfer** than those who do not. In addition, they earn significantly **higher GPA's** and earn **more credits**. However, they are just as likely to experience at least one semester of grades of all F, W, or U or spend at least one semester on academic probation.

The decision to attend **full-time** or **part-time** in the first semester of attendance for a traditional freshman has a profound effect on students' goal attainment over a three-year period. Retention and persistence rates for students who choose to be **part-time** are **one-half** that of full-time students. Only one first-semester part-time student earned the AA degree and only 8 transferred. The overall GPA was **one full point below** that of full-time students and the average GPA in EN 101 and first credit math course was significantly lower than that for full-time students. First-semester part-time students are **twice as likely** to experience a semester of grades of all F, W, or U as full-time students

# Whatever Happened to the Class of 1994?

## A Three-year Longitudinal Study of Traditional Freshmen Entering Frederick Community College in the Fall 1994 Semester

### Introduction

The high school graduating class of 1994 contributed 494 new students to the 1,321 students who enrolled for the first time at Frederick Community College for the Fall 1994 semester. These "traditional freshmen," as they are called, represent the largest identifiable group of students within our student body. Accordingly, they are afforded a considerable amount of attention, time, and resources from college staff.

Because of the relatively large number of local high school graduates who make FCC their first college experience, various measurements of college-readiness, academic success, retention, graduation and transfer success are widely followed. In addition, the characteristics of the entering freshman class is one of the aspects of community college enrollment that allows for comparisons with four-year colleges. Often, when members of the community and others unfamiliar with the diverse nature of community college enrollment draw conclusions about the quality of the students who attend and the measures of outcomes success, they focus on the aspects of traditional students.

This concentration, however, is not altogether undeserved. While new, traditional freshmen comprise only 12% of our student body, they account for nearly one-third of all full-time students and approximately 25% of F.T.E. In Frederick County, the most common experience for a graduate of the public school system is attending Frederick Community College. The success of this category of student at FCC is viewed by many in the community we serve as a vital measure of our institutional effectiveness.

The purpose of this report is to add to the knowledge base about the outcomes of attendance at Frederick Community College by those students who graduate from high school and enroll as first time students the fall semester following their high school graduation.

### The Class of 1994

The 494 1994 high school graduates that enrolled for the Fall 1994 semester at the time comprised the largest traditional freshman class in FCC's history. 432 were graduates of the seven public high schools in Frederick County and represented 26.8% of the entire graduating class. Approximately two out of three 1994 Frederick County high school graduates attending any college for the Fall 1994 semester were enrolled at FCC.

During their high school careers, students attending Frederick County and surrounding area high schools had received a number of communications, contacts, and promotional materials from FCC as a means of encouraging attendance at the College. Many had met with a college staff member at the high school or at the College. Many had visited the campus for a college fair, athletic event, cultural event, or other purpose during the course of their high school careers.

Each student had applied to the college and had received an acceptance letter and information about placement testing, financial aid and freshman orientation. Nearly all students had provided the College with a copy of the high school transcript complete through the 12th grade. Placement testing is required of all full and part-time degree or certificate-seeking students and is a requirement for many individual courses as well. Students completed the required placement tests in mathematics, writing, and reading during a session held on a Saturday in each of the county high schools or in the College's Testing Center on campus.

Attendance at a Freshman Orientation and Registration session held over the summer months is required for all traditional freshmen. Approximately 75% of the members of the Class of 1994 took advantage of this opportunity to become familiar with the campus and its services and to meet with an advisor to review the results of the placement tests and arrange a schedule of classes. Parents were encouraged to accompany students to the Orientation.

Slightly more than 83% of the Class of 1994 who enrolled for the Fall 1994 semester enrolled as full-time students, taking 12 or more hours of classes. Three-fourths indicated "transfer to a four-year college or university" as their primary reason for attending FCC.

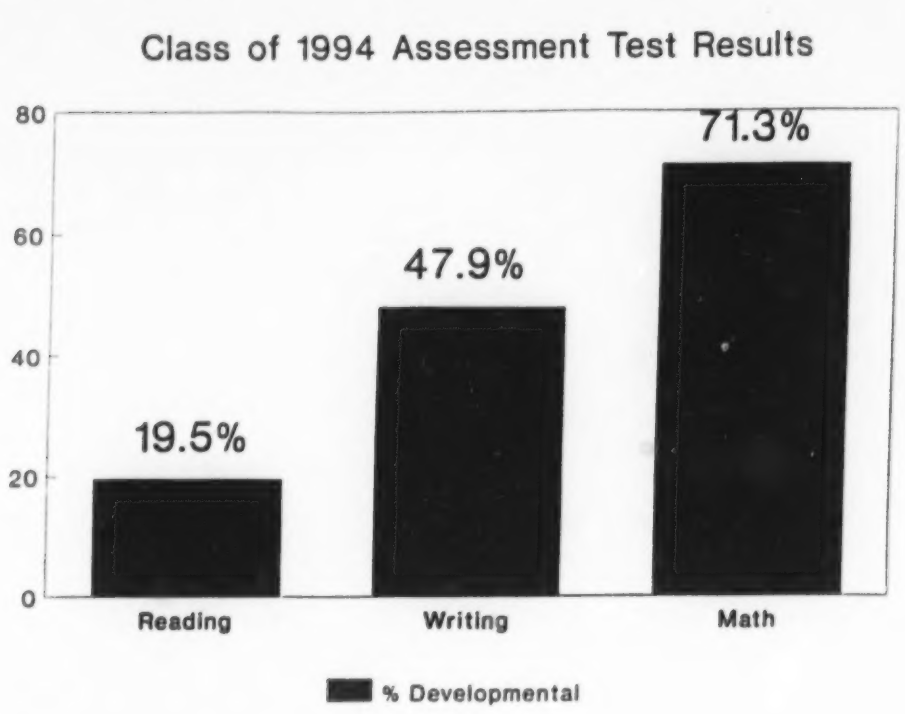
**Assessing the Class of 1994**

489 out of 494 (99%) entering 1994 high school graduates completed all or part of the FCC placement tests in mathematics, reading, and writing. Placement testing is not always required for students enrolling for only applied music, studio art, 100 series physical education courses, and certain other courses.

475 out of 494 (96%) completed all three parts of the placement tests. Completion of all three parts of the placement tests is required of all new, full-time students, all degree or certificate seeking students, and part-time students enrolling for courses with placement test pre-requisites.

101 out of 494 (20%) completed all three parts of the FCC placement tests and placed at college level. In other words, 80% of our incoming traditional freshman class in the Fall 1994 semester had at least one area of academic deficiency that required enrollment and successful completion of a developmental class prior to taking credit courses in that discipline -- 65% required two.

The following chart provides the overall assessment results of the Class of 1994 on the FCC reading, writing, and mathematics placement tests and the percentage showing developmental needs in the three areas.




The percentages of developmental needs shown here in reading, writing, and mathematics for the Class of 1994 are not markedly different than those for classes coming before and for those coming after. Since these measures have been tracked starting in 1993, roughly one-fourth of our incoming traditional freshmen have shown a need for developmental reading, one-half for developmental writing, and three-fourths for developmental mathematics.

**Purpose of the Study**

While we have known a great deal about the characteristics of our incoming traditional freshmen and the extent of their developmental needs, we have not had data showing the degree to which this population enrolls in and successfully completes the required developmental courses. Nor do we have data showing their retention, graduation, and transfer rates. Nor do we have data comparing a number of other factors, demographic and academic, to these same outcome measures. Since 80% of our traditional freshman require successful completion of at least one developmental course before completing credit course work in a related academic discipline, tracking this student group from assessment, enrollment, and completion of required developmental courses is necessary to fully measure their progress through the institution to the achievement of measureable goals. Although this study will examine a great many characteristics of this student group, it will concentrate on the relationship between enrollment and successful completion of required developmental courses and retention, attrition, and the attainment of certain measurable outcomes.

**Variables**

For the purposes of this study a number of variables have been examined:

Race
High school attended
Participation in Open Campus
Enrollment in FCC Honors Program
FCC curriculum
Reading assessment result
Completion of required developmental reading course
Writing assessment result
Completion of required developmental writing course
Mathematics assessment result
Completion of required developmental mathematics course
Grade in EN 101
Grade in first credit mathamatics course
Grade in first credit science course
Total FCC credits earned
FCC GPA
AA or Certificate awarded and curriculum
Enrollment in Spring 1995 semester
Enrollment in Fall 1995 semester
Enrollment in Spring 1996 semester
Enrollment in Fall 1996 semester
Enrollment in Spring 1997 semester
Number of semesters of all grades of F, W, or U
Number of semesters of academic probation
Successful transfer to a four-year college

**Methodology**

A total of 494 1994 high school graduates enrolled at Frederick Community College for the Fall 1994 semester. Placement test scores, FCC transcripts, and information from the FCC *Transfer Tracking System and Successful Transfer Survey* were used to obtain data on the variables listed above.

This report will address the following research questions:

1. What is the enrollment and completion rate of required developmental courses?
2. What is the rate and pattern of persistence and retention over a three year period?
3. What is the rate of attainment of the associate degree or certificate?
4. What is the successful transfer rate to four-year colleges and universities?
5. What is the pattern of curriculum choice?
6. What is the overall GPA?
7. What is the average number of credits earned?
8. What is the frequency of semesters of grades of all F, W, or U?
9. What is the frequency of semesters of academic probation?
10. What is the frequency of participation in the Honors Program?
11. What is the frequency of participation in the Open Campus Program?
12. What is the relationship of race and high school attended to the above variables?
13. What is the effect of completion or non-completion of required developmental courses on GPA in first English, math, and science courses; overall GPA; number of credit hours earned; persistence and retention rates over a three-year period; successful transfer rate; degree or certificate attainment; semesters of grades of all F, W, or U; and semesters of academic probation?
14. Are there other significant relationships between variables that would help explain students' progress toward measurable outcomes?

# Findings

## Demographics

The following demographic variables were tracked in this study: race, and high school attended. The following charts show the distribution of these variables in the Class of 1994:

### Race

| Race | Number | Percentage |
|---|---|---|
| American Indian | 3 | .06% |
| African American | 25 | 5.1% |
| Asian | 12 | 2.4% |
| Hispanic | 5 | 1.0% |
| White | 446 | 90.3% |
| Other | 3 | .06% |

### High School Attended

| High School | Number | Percentage |
|---|---|---|
| Brunswick | 32 | 6.5% |
| Catoctin | 32 | 6.5% |
| Frederick | 97 | 19.6% |
| Thomas Johnson | 68 | 13.8% |
| Linganore | 83 | 16.8% |
| Middletown | 45 | 9.1% |
| Walkersville | 75 | 15.2% |
| Other | 62 | 12.6% |

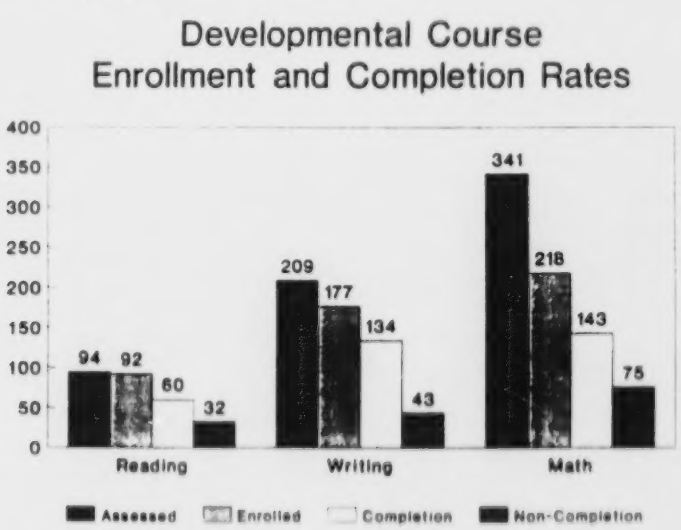
## Full-time and Part-time Attendance Patterns

The following chart shows the pattern of full and part-time attendance for the Class of 1994 for the three academic years covered in this study:

| Semester | Full-time | Part-time |
|---|---|---|
| Fall 1994 | 410 (83%) | 84 (17%) |
| Spring 1995 | 336 (82%) | 75 (18%) |
| Fall 1995 | 262 (81%) | 62 (19%) |
| Spring 1996 | 232 (83%) | 47 (17%) |
| Fall 1996 | 105 (66%) | 54 (34%) |
| Spring 1997 | 74 (57%) | 56 (43%) |

## Completion Rates for Required Developmental Courses

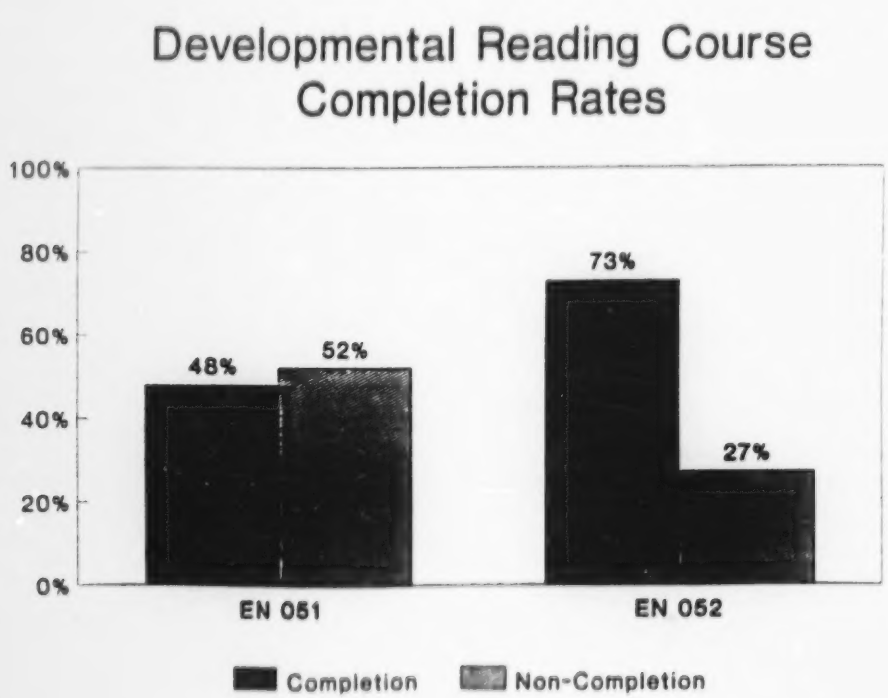
While we have known the extent of the developmental needs of our traditional freshmen from the summaries of the results of performance on the College's reading, writing and mathematics placement tests, we do not have data showing the degree to which this student group enrolls in and successfully completes the required courses. The following chart shows the number of students who were assessed with developmental need in a particular area, those actually enrolling in the required courses, the number who successfully completed the required course, and those who did not over a three-year period.



**Reading**

94 (19.5%) of the students completing the College's reading placement tests were shown to be developmental in the area of reading. The reading placement test consisted of the Nelson-Denny Reading Test. Of that group, 92 (98%) had enrolled in the appropriate developmental reading course by the Spring 1997 semester. 63 were placed into EN 052, the upper-level developmental reading course and 29 were placed into EN 051, the lower-level developmental reading course. For those students placed into EN 051, successful completion of developmental reading requirements usually meant having to complete EN 051 and EN 052. A very small number of students made sufficient progress in EN 051 to test out of developmental reading entirely by completing that course only. For those students initially placed into EN 052, receiving a grade of "S" in the course was equivalent to completing all developmental reading requirements.

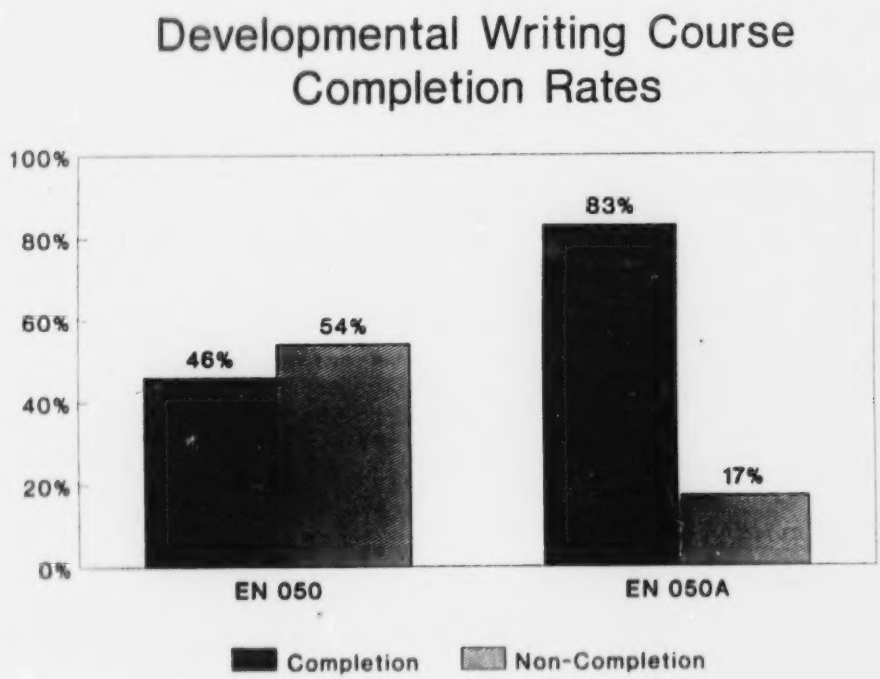
The following chart shows the developmental reading course completion rates. 14 (48%) of the 29 students who were initially assigned to EN 051 eventually completed their developmental reading requirements. 46 (73%) of the 63 students who were initially assigned to EN 052 completed their developmental reading requirements. Overall, 64% of all students assessed to be developmental in the area of reading eventually enrolled in the required course (s) and completed all of their required developmental reading course (s). 65% of the students who enrolled in the required reading course (s) completed their developmental reading requirements.



**Writing**

209 (48%) of the students completing the College's writing placement test were shown to be developmental in the area of writing. The writing placement test consisted of a graded writing sample. Of that group, 177 (85%) had enrolled in the appropriate developmental writing course by the Spring 1997 semester. 142 were placed into EN 050A, the upper-level developmental writing course and 35 were placed into EN 050, the lower-level developmental writing course. For those students placed into EN 050, successful completion of developmental writing requirements usually meant having to complete EN 050 and EN 050A. A very small number of students made sufficient progress in EN 050 to test out of developmental writing entirely by completing that course only. For those students initially placed into EN 050A, receiving a grade of "S" in the course was equivalent to completing all developmental writing requirements.

The following chart shows the developmental writing course completion rates. 16 (46%) of the 35 students who were initially assigned to EN 050 eventually completed their developmental writing requirements. 118 (83%) of the 142 students who were initially assigned to EN 050A completed their developmental writing requirements. Overall, 64% of all students assessed to be developmental in the area of writing eventually enrolled in the required course (s) and completed their developmental writing course (s). 76% of the students who enrolled in the required writing course (s) completed their required developmental writing requirements.



**Mathematics**

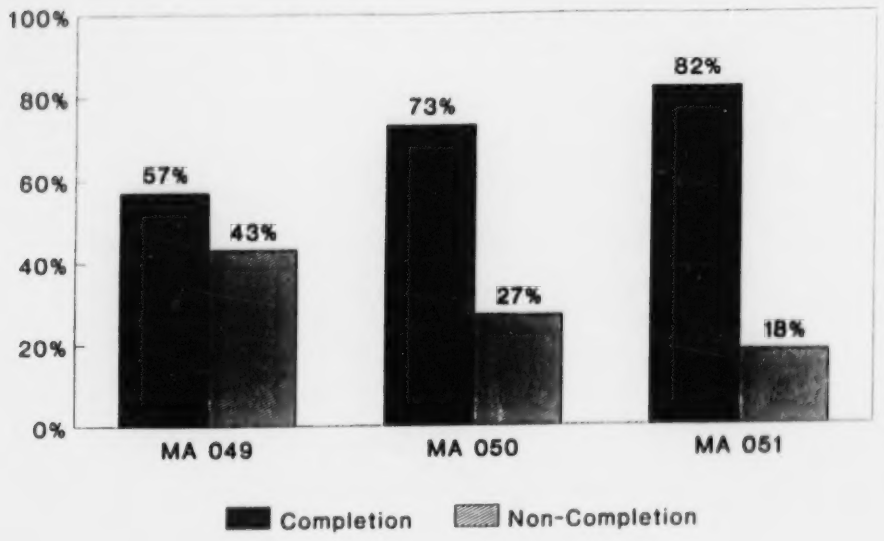
341 (71%) of the students completing the College's mathematics placement tests were shown to be developmental in the area of mathematics. Of that group, 218 (64%) had enrolled in the appropriate developmental mathematics course by the Spring 1997 semester. The mathematics placement test consisted of three separate examinations: Part I - arithmetic; Part II - pre-algebra; and Part III - basic algebra. Failure of any part meant assignment to the developmental level course corresponding to the skills and concepts covered by the appropriate test with the lowest level of failure taking precedence. For example, a student passing part II but failing part I would be assigned to the arithmetic developmental math class.

The developmental mathematics enrollment and completion rates are somewhat complicated by the different pre-requisite pathways that existed in this discipline up until the Fall 1996 semester. Several credit math courses required successful completion of only parts I and II of the mathematics placement test, while credit courses at the intermediate algebra level (MA 110) or higher required successful completion of all three parts. Therefore, while some students tested at the developmental level on part III, they had the option to take a lower level credit math course if they had successfully completed parts I and II.

The charts here show only the completion rates of those students who had initially tested into levels I, II, or III (MA 049, MA 050, MA 051), and had actually enrolled in the appropriate course. Completion rates for additional developmental math courses taken and completed after initial placement for testing into levels I and II are not recorded. It should be noted that without successful completion of MA 049, a student could not move onto MA 050. Without successful completion of MA 050 or passing part II of the mathematics placement test, a student could never take a credit mathematics course. However, a student completing MA 050 or passing part II of the placement test could either move onto MA 051 or take a lower-level credit mathematics course.

96 students (60% of those not passing part I) enrolled in MA 049. 95 students (83% of those passing part I but failing part II) enrolled in MA 050. 27 (40% of those passing parts I and II but failing part III and choosing not to enroll in a lower-level credit math class) enrolled in MA 051. The following chart shows the developmental math course completion rates. 52 (54%) of the 96 students initially enrolled in MA 049 eventually completed MA 049 and MA 050 successfully; 69 (73%) of the 95 students initially enrolled in MA 050 eventually completed the course successfully; 22 (81%) of the 27 students initially enrolled in MA 051 eventually completed the course successfully. However, only 42% of the students who were initially assessed as developmental in math eventually enrolled in and completed their developmental math requirements

## Developmental Math Course Completion Rates




**Retention and Persistence Rates**

The retention (enrollment from one semester to the next) and persistence (the total number of consecutive semesters in attendance) rates for traditional freshmen has been tracked at FCC since 1984. The rates for one, two, and three semester retention increased steadily throughout the 1980's. Since 1990, the average retention rates for traditional freshmen have been:

**Average Semester Retention Rates for Traditional Freshmen Since 1990**

| Semester | Rate |
|---|---|
| First fall to first spring | 81% |
| First spring to second fall | 66% |
| Second fall to second spring | 58% |

In general, since 1990, about 8 out of every 10 traditional freshmen who enroll in the fall semester re-enroll for the subsequent spring semester. About two-thirds return for their second year and a little over one-half make it to a fourth consecutive semester.

Until this study, there had been no attempt to track a freshman class over three full academic years. There is growing evidence that the typical traditional age community college student takes

longer than two years to achieve measurable outcome goals. Therefore, for the Class of 1994, retention and persistence rates were calculated for five consecutive semesters after initial enrollment in the Fall 1994 semester. The chart following shows the overall retention rates

**Overall Semester Retention Rates**
**Class of 1994**

| Semester | # of Students | Rate |
|---|---|---|
| Fall 1994 | 494 | -- |
| Spring 1995 | 411 | 83% |
| Fall 1995 | 324 | 65% |
| Spring 1996 | 279 | 56% |
| Fall 1996 | 159 | 32% |
| Spring 1997 | 128 | 26% |

The chart shows that nearly one-third of the students who had initially enrolled for the Fall 1994 semester were still in attendance five semesters later and that more than one-fourth six semesters later.

## Associate Degree and Certificate Attainment

A total of 105 students (21%) had earned an associate degree or certificate by the May, 1997 graduation. There were four potential degree-awarding periods for the Class of 1994. The following chart shows the number of degrees and certificates awarded at each period.

**Associate Degrees and Certificates Awarded**

| Awarding Period | # of Degrees | # of Certificates |
|---|---|---|
| May 1996 | 32 | 0 |
| August 1996 | 13 | 1 |
| December 1996 | 26 | 0 |
| May 1997 | 33 | 0 |
| Total | 104 | 1 |

Degrees and certificates were awarded in the following areas:

| Curriculum | # of awards |
|---|---|
| General Studies | 51 |
| Business Administration | 19 |
| Teacher Education | 12 |
| Business Management | 2 |
| Communications (Visual) | 2 |
| Criminal Justice | 2 |
| Psychology | 2 |
| Nursing | 2 |
| Park Management | 2 |
| Computer Hardware/Software | 1 |
| Early Childhood Development | 1 |
| Human Services-Developmental | 1 |
| Mathematics Education | 1 |
| Office Technology-Medical | 1 |
| Physical Education | 1 |
| Practical Nursing | 1 (certificate) |
| Pre-Nursing | 1 |
| Pre-Pharmacy | 1 |
| Pre-Physical Therapy | 1 |
| Sociology | 1 |
| **Total** | **105** |

**Successful Transfer to Four Year Colleges and Universities**

The *Frederick Community College Transfer Tracking System and Successful Transfer Survey* allows the College to gain an unique perspective into the transfer activity of its students and

students' analyses of their transfer experiences. Upwards of 95% of all successful transfer activity has been tracked by the *Transfer Tracking System* over the past seven years. FCC is fairly unusual among community colleges in Maryland with regard to the transfer activity of its students in their choice of institutions. More than one-half of all four-year college transfer is to colleges and universities outside of the University of Maryland System. Therefore, if FCC were to rely solely on UMS community college transfer reports to calculate the transfer success of its students, it would be neglecting the majority of the transfer activity of its students.

To a certain extent, the explanation for the transfer patterns of FCC students lies in the presence of two private, liberal arts colleges in Frederick County (Mt. St. Mary's College and Hood College) and a West Virginia state college (Shepherd College) within easy commuting distance. However, a significant amount of transfer activity is to other private and state institutions outside of the State of Maryland.

The 494 members of the class of 1994 were cross-checked against the *Transfer Tracking System* at the end of every semester, Spring 1995 through Fall 1997. The following chart shows the successful transfer activity and the semester of transfer:

| Semester of Transfer | Number of Students |
|---|---|
| Spring 1995 | 2 |
| Fall 1995 | 20 |
| Spring 1996 | 12 |
| Fall 1996 | 67 |
| Spring 1997 | 2 |
| Fall 1997 | 33 |
| **Total** | **136** |

Although three-fourths indicated "transfer to a four-year college" as their primary goal upon admission to the college, only 28% had actually transferred successfully within three years. Of those students who transferred successfully, 54 or 40%, had earned the AA degree prior to transfer. 75% of the successful transfer students had earned their AA degrees in just three curricula; General Studies, Business Administration, and Teacher Education. The following chart shows the distribution of AA degrees of successful transfer students by FCC curriculum:

**FCC Curriculum Choice by Successful Transfer Students**

| Curriculum | Number |
|---|---|
| General Studies | 70 (51%) |
| Business Administration | 20 (15%) |
| Education Early/Elem/Mid | 11 (8%) |
| Psychology | 5 |
| Art | 4 |
| Communications-Visual | 4 |
| Computer Science | 3 |
| Accounting | 2 |
| Pre-Physical Therapy | 2 |
| Biology | 1 |
| Criminal Justice | 1 |
| Drama | 1 |
| History | 1 |
| Human Services/Adult | 1 |
| Information Processing | 1 |
| Information Systems Man. | 1 |
| Mathematics | 1 |
| Math Education | 1 |
| Nursing | 1 |
| Parks Management | 1 |
| Philosophy | 1 |
| Physical Education | 1 |
| Pre-Medical Technology | 1 |
| Pre-Pharmacy | 1 |
| Wildlife Management | 1 |
| **Total** | **136** |

**Overall Curriculum Choice**

In 1994, the students in this study had more than 70 possible curriculum choices when they completed their applications and enrolled for classes the first time. At Freshman Orientation and Registration, an effort was made to match students' curriculum choices with a faculty advisor in the discipline. Students selecting General Studies as a curriculum or students with multiple developmental needs were most often assigned to a counselor or advisor from the Student Development Division. If a student selecting a curriculum other than General Studies persisted for more semesters beyond the Fall of 1994, he or she was assigned to a faculty advisor that matched the curriculum selection. All full-time students were required to meet with an advisor to gain approval for course selections prior to registration for each semester. The following chart shows overall initial curriculum choices for the Class of 1994:

**Overall Curriculum Choices**
**Ordered by Frequency**

| Curriculum | Number |
|---|---|
| General Studies | 191 |
| Business Administration | 54 |
| Education/Early/Elem/Mid | 31 |
| Criminal Justice | 19 |
| Nursing | 17 |
| Art | 13 |
| Psychology | 11 |
| Communications/Visual | 11 |
| Physical Education | 10 |
| Busniess Management | 10 |
| Drafting | 9 |
| Accounting | 7 |
| Parks Management | 7 |
| Biology | 6 |
| Pre-Physical Therapy | 6 |
| Engineering | 6 |
| Computer Science | 6 |
| Legal Assistant | 6 |
| History | 5 |
| Pre-Nursing | 5 |
| Electronics | 4 |
| Medical Office Tech | 4 |
| Early Childhood Dev | 4 |
| Pre-Dental Hygiene | 3 |
| Pre-Pharmacy | 3 |

| Curriculum | Number |
|---|---|
| Drama | 3 |
| Math Education | 3 |
| Music Education | 3 |
| Info Proc/Computer Prog | 3 |
| English/Lit | 2 |
| Sociology | 2 |
| Bio Lab Tech | 2 |
| Wildlife Management | 2 |
| Human Services/Adult | 2 |
| Human Services/Develop | 2 |
| Banking/Finance | 2 |
| Practical Nursing | 2 |
| Computer Hardware/Soft | 2 |
| (All others) | 16 |
| **Total** | **494** |

## Goal Attainment by Curriculum Choice

The following chart combines information from the preceding three sections to show a "goal attainment" ratio by curriculum code. Since 40% of all successful transfer students had earned the AA degree prior to transfer and some students who earned the AA degree did not transfer, the two "goal attainment" columns may represent duplicated students. The proper way to read each row would be: " Of the 191 1994 high school graduates selecting General Studies as their curriculum, 121 (63%) had either earned the AA degree, successfully transferred, or achieved both within three years after initial enrollment." On the other hand, for Criminal Justice, the row would read, "Of the 19 1994 high school graduates selecting Criminal Justice as their curriculum, only 3 (16%) had either earned the AA degree, successfully transferred, or achieved both within three years after initial enrollment." Of those curricula chosen by at least five students upon initial enrollment, the highest percentage of goal attainment was in Education/Early, Elementary/Middle. Of students selecting this curriculum, 74% had either earned the AA degree, transferred successfully, or both within three years.

**Goal Attainment by Curriculum Choice**

| Curriculum | Number Selecting | Number of degrees or Certificates Awarded | Number of Successful Transfers |
|---|---|---|---|
| General Studies | 191 | 51 | 70 |
| Business Administration | 54 | 19 | 20 |
| Education/Early/Elem/Mid | 31 | 12 | 11 |
| Criminal Justice | 19 | 2 | 1 |
| Nursing | 17 | 2 | 1 |
| Art | 13 | 0 | 4 |
| Psychology | 11 | 2 | 5 |
| Communications/Visual | 11 | 2 | 4 |
| Physical Education | 10 | 1 | 1 |
| Business Management | 10 | 2 | 0 |
| Drafting | 9 | 0 | 0 |
| Accounting | 7 | 0 | 2 |
| Park Management | 7 | 2 | 1 |
| Biology | 6 | 0 | 1 |
| Pre-Physical Therapy | 6 | 1 | 2 |
| Engineering | 6 | 0 | 0 |
| Computer Science | 6 | 0 | 3 |
| Legal Assistant | 6 | 0 | 0 |
| History | 5 | 0 | 1 |
| Pre-Nursing | 5 | 1 | 0 |
| Electronics | 4 | 0 | 0 |
| Office Technology/Med | 4 | 1 | 0 |
| Early Childhood Dev | 4 | 1 | 0 |

| Curriculum | Number Selecting | Number of degrees or Certificates Awarded | Number of Successful Transfers |
|---|---|---|---|
| Pre-Dental Hygiene | 3 | 0 | 0 |
| Pre-Pharmacy | 3 | 1 | 1 |
| Drama | 3 | 0 | 1 |
| Math Education | 3 | 0 | 1 |
| Music Education | 3 | 0 | 0 |
| Information Proc/Comp Prog | 3 | 0 | 1 |
| English Literature | 2 | 0 | 0 |
| Sociology | 2 | 1 | 0 |
| Bio Lab Tech | 2 | 0 | 0 |
| Wildlife Management | 2 | 0 | 1 |
| Human Services/Adult | 2 | 0 | 1 |
| Human Services/Dev | 2 | 1 | 0 |
| Banking/Finance | 2 | 0 | 0 |
| Practical Nursing | 2 | 1 | 0 |
| Computer Hard/Software | 2 | 1 | 0 |
| All others | 16 | 0 | 3 |
| **Total** | **494** | **105** | **136** |

## Overall Grade Point Average and Total Credits Earned

Overall, the grade point average (GPA) earned by the Class of 1994 was 2.18 and the average number of credits earned was 32.08. Without further explanation, it would appear that, after three years, the typical traditional freshman enrolling at Frederick Community College earns a GPA barely sufficient to qualify for a degree or for transfer to a four-year college. It would also appear that the same student would have earned barely five credits per semester. However, information from the *Transfer Tracking System* and other College reports shows a much different picture. Further analyses in this report will shed light on this disparity.

## Frequency of Semesters of All Grades of F, W, or U and Academic Probation

One of more persistent and troubling characteristics observed by staff of traditional-age students is the frequency of occurrence of semesters in which all grades received are F, W, or U, indicating a semester where no academic progress has been made. A grade of "F" indicates a failing grade for the course. A grade of "W" indicates withdrawal within the ten-week withdrawal period. A grade of "U" indicates an unsatisfactory or failing grade in some developmental classes.

According to College policy, students are placed on academic probation as a function of credits attempted and GPA. Initially, any student attempting at least 6 credit hours with a GPA of less than 1.0 is placed on academic probation. As credit hours attempted increases, the minimum expected GPA increases until students attempt 46 credits. At that threshold, students are expected to have achieved a GPA of at least 1.899. After four consecutive semesters of unsatisfactory progress, a student is dismissed from the College.

There are a number of hypotheses that have been put forward to explain the phenomenon of continual semesters of unsatisfactory performance in all courses attempted. Some believe that students simply lose interest in college and stop attending. Others believe that some students enroll for classes with no intention of attending -- they are enrolled merely to remain on parents' insurance policies. Still others believe that some students are well-intentioned but are so disorganized in their personal lives as to prevent any real progress in college. Earlier College studies on the "all F,W,U phenomenon" showed that level of assessment on placement tests was not a determining factor in explaining semesters of no academic progress.

What we have not known is the extent to which this particular student segment experiences semesters of all unsatisfactory performance or the frequency with which students in this segment are placed on academic probation over a period of time. The chart below shows the frequency of semesters of all grades of "F," "W," or "U" three years after initial enrollment:

| Semesters of all F,W, U Grades | Number of Students |
|---|---|
| 1 | 108 (21.9%) |
| 2 | 20 (4.0%) |
| 3 | 8 (1.5%) |
| 4 | 2 (0.4%) |

138 students, or 28% of the Class of 1994 experienced at least one semester when he or she received all unsatisfactory grades. 59, or 43% of the semesters of all grades of F, W, or U occurred in the first, Fall 1994, semester.

83 students, or 17% of the Class of 1994 spent at least one semester on academic probation. The following chart shows the extent of assignment to academic probation status of the Class of 1994:

| Semesters on Academic Probation | Number of Students |
|---|---|
| 1 | 45 |
| 2 | 24 |
| 3 | 11 |
| 4 | 2 |
| 5 | 1 |

It should be noted that since developmental courses do not carry "credits attempted," students who have unsuccessful experiences in developmental reading, writing, and mathematics are not "picked up" by the academic probation and dismissal computer program. That is a partial explanation of why the number of students experiencing semesters of grades of all "F," "W," or "U" is much larger than the number of students on academic probation. No member of the Class of 1994 has been academically dismissed from the College.

**Participation in the Honors Courses**

Students who demonstrate high academic ability are encouraged and invited to join the Honors Program and to enroll in Honors Courses. Twenty-three members of the Class of 1994 enrolled in at least one Honors Course. This number represents 5% of the Class of 1994.

**Participation in the Open Campus Program**

Qualifying high school seniors may enroll at FCC concurrently with their high school program. Students are approved for this activity by the high school and must take placement tests to qualify for credit courses like any other students. Credits attempted and earned appear on students' college transcripts. Students who participate in the Open Campus program are not restricted to course choice. Seventy-seven members of the Class of 1994 took at least one course at FCC prior to their graduation from high school. This number represents 16% of the Class of 1994 and 55% of all students who participated in the Open Campus Program during school year 1993-94.

**The Effect of Completion or Non-Completion of Required Developmental Courses on GPA in EN 101, First Credit Math, and First Credit Science Courses**

61% of the Class of 1994 was required to complete at least one developmental course before taking credit courses in a related discipline. (Note: This figure does not include those students failing Part III of the Math Placement Test and opting to take a credit math course below the Intermediate Algebra level. If these students are included, then the figure becomes 80%). However, it is important to know that not all students required to take developmental courses as a result of their performance on the placement tests actually enrolled in the required courses.

The following series of charts tracks the difference in GPA in three core subjects (EN 101, first credit math course, and first science class) between students enrolling in the required developmental course (s) as a result of having been assessed as developmental in reading, writing, and mathematics and those who were assessed as non-developmental. It also shows the difference in GPA between those students who completed required developmental courses and those who did not. Each core subject is examined for the effect of developmental reading, writing, and mathematics.

The core subjects listed here were chosen because each had a pre-requisite related to satisfactory performance on either the reading, writing, or math placement test. Enrollment in EN 101 requires successful completion of the writing and reading test or satisfactory completion of EN 050A. Enrollment in credit math requires successful completion of at least parts I and II of the math placement test or satisfactory completion of MA 049 and MA 050. Or, for those students wishing to take a credit math class at the intermediate algebra level or higher, successful completion of parts I, II, and III of the math placement test or satisfactory completion of MA 051. Enrollment in a credit science class required successful completion of parts I and II of the math placement test or satisfactory completion of MA 050.

Occasionally, a student will appear as enrolled in a core subject even though a required developmental course is not completed. This can be explained by a loophole in the advising and registration system that existed until school year 1996/97 that has since been corrected. Students were allowed to pre-register for core subjects prior to completion of required developmental courses. Some students did not subsequently complete the required developmental course but remained registered for the credit core subject. There is now a system in place to cross-check class rolls in core subjects with specific placement testing pre-requisites for developmental education completion.

## The Effect of Completion or Non-Completion of Developmental Reading

**Core Subject - EN 101**

| Status | n | GPA in EN 101 |
|---|---|---|
| All Students | 393 | 2.07 |
| No Dev Reading Required | 340 | 2.10 |
| Dev Reading Required | 53 | 1.84 |
| Dev Reading Completed | 44 | 1.90 |
| Dev Reading Not Completed | 9 | 1.44 |

**Core Subject - First Credit Math**

| Status | n | GPA in Math |
|---|---|---|
| All Students | 314 | 2.06 |
| No Dev Reading Required | 267 | 2.10 |
| Dev Reading Required | 47 | 1.80 |
| Dev Reading Completed | 39 | 2.05 |
| Dev Reading Not Completed | 8 | 0.62 |

**Core Subject - First Credit Science**

| Status | n | GPA in Science |
|---|---|---|
| All Students | 241 | 2.37 |
| No Dev Reading Required | 216 | 2.39 |
| Dev Reading Required | 25 | 2.12 |
| Dev Reading Completed | 22 | 2.09 |
| Dev Reading Not Completed | 3 | 2.33 |

## The Effect of Completion or Non-Completion of Developmental Math

**Core Subject - EN 101**

| Status | n | GPA in EN 101 |
|---|---|---|
| All Students | 393 | 2.07 |
| No Dev Math Required | 228 | 2.17 |
| Dev Math Required | 165 | 1.93 |
| Dev Math Completed | 127 | 2.16 |
| Dev Math Not Completed | 38 | 1.15 |

**Core Subject - First Credit Math**

| Status | n | GPA in Math |
|---|---|---|
| All Students | 314 | 2.06 |
| No Dev Math Required | 195 | 2.30 |
| Dev Math Required | 119 | 1.65 |
| Dev Math Completed | 114 | 1.66 |
| Dev Math Not Completed | 5 | 1.40 |

**Core Subject - First Credit Science**

| Status | n | GPA in Science |
|---|---|---|
| All Students | 241 | 2.37 |
| No Dev Math Required | 163 | 2.59 |
| Dev Math Required | 78 | 2.29 |
| Dev Math Completed | 74 | 2.33 |
| Dev Math Not Completed | 4 | 1.50 |

## The Effect of Completion or Non-completion of Developmental Writing

**Core Subject - EN 101**

| Status | n | GPA in EN 101 |
|---|---|---|
| All Students | 393 | 2.07 |
| No Dev Writing Required | 279 | 2.18 |
| Dev Writing Required | 114 | 1.79 |
| Dev Writing Completed | 111 | 1.80 |
| Dev Writing Not Completed | 3 | 1.66 |

**Core Subject - First Credit Math**

| Status | n | GPA in Math |
|---|---|---|
| All Students | 314 | 2.06 |
| No Dev Writing Required | 216 | 2.20 |
| Dev Writing Required | 98 | 1.73 |
| Dev Writing Completed | 91 | 1.76 |
| Dev Writing Not Completed | 7 | 1.42 |

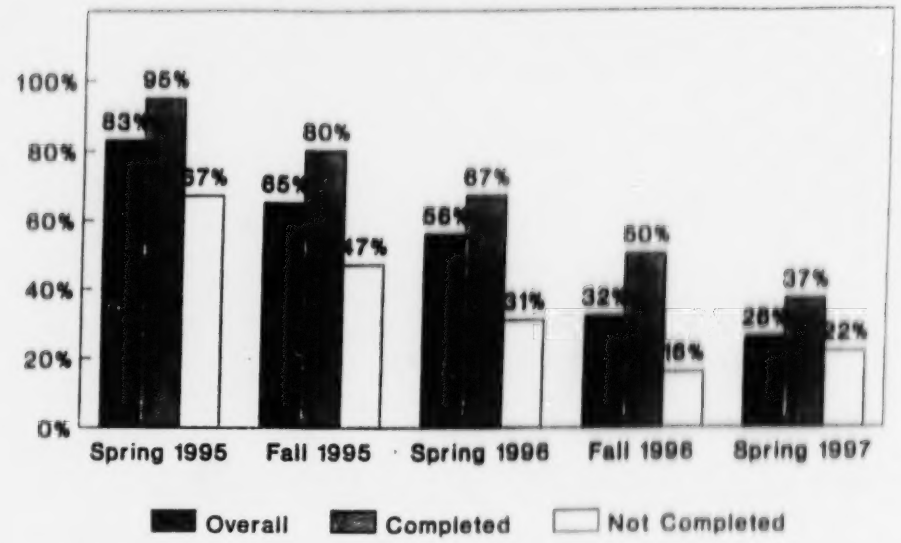
**Core Subject - First Credit Science**

| Status | n | GPA in Science |
|---|---|---|
| All Students | 241 | 2.37 |
| No Dev Writing Required | 182 | 2.40 |
| Dev Writing Required | 59 | 2.25 |
| Dev Writing Completed | 57 | 2.26 |
| Dev Writing Not Completed | 2 | 2.00 |

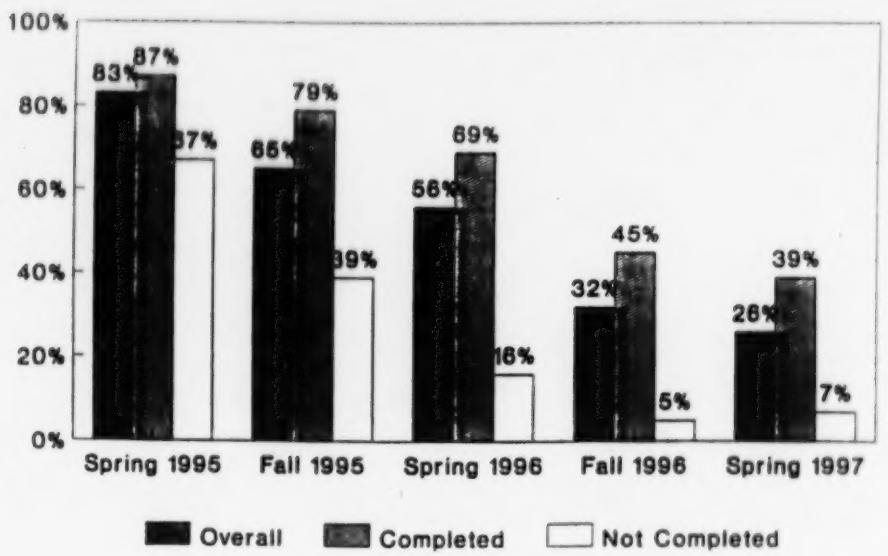
## The Effect of Completion of Developmental Courses on Retention and Persistence

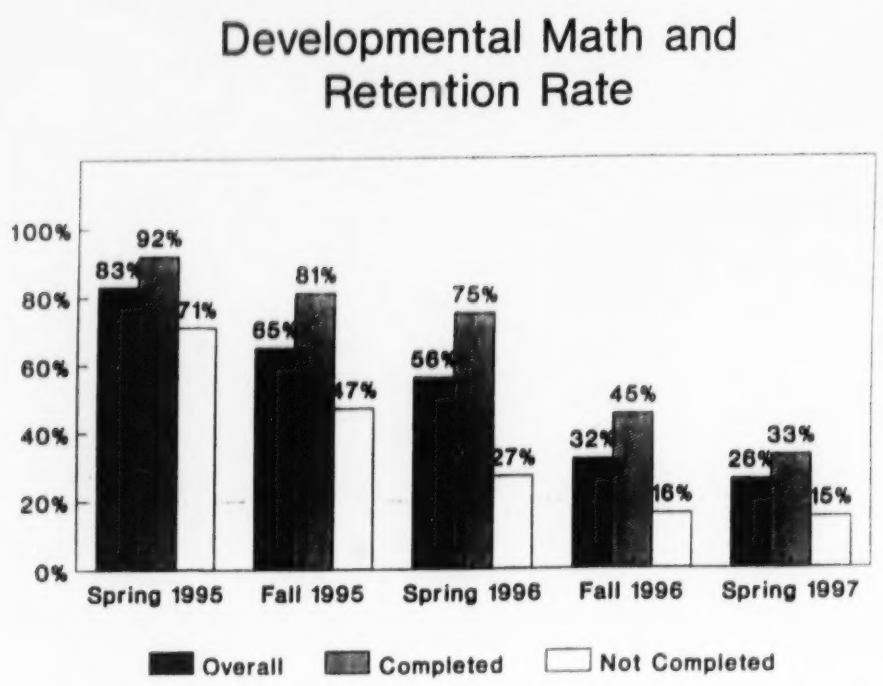
The following charts show the effect of enrollment and completion or non-completion of required developmental courses on retention and persistence over a three-year period. The following charts show that in all three areas; reading, writing, and math, enrollment and successful completion of required developmental courses leads to a higher retention and persistence rate.

## Developmental Reading and Retention Rate




## Developmental Writing and Retention Rate






## The Effect of Completion of Developmental Courses on GPA

The overall GPA for the 494 students of the Class of 1994 was 2.18. However, there were significant differences in the GPA's between those students who enrolled in and completed required developmental courses and those who did not.

**Developmental Reading**

| Group | GPA |
|---|---|
| All Students | 2.18 |
| All Dev Reading | 1.61 |
| Dev Reading Completed | 1.94 |
| Did Not Complete Dev Reading | 0.99 |

**Developmental Writing**

| Group | GPA |
|---|---|
| All Students | 2.18 |
| All Dev Writing | 1.90 |
| Dev Writing Completed | 2.21 |
| Did Not Complete Dev Writing | 0.92 |

**Developmental Math**

| Group | GPA |
|---|---|
| All Students | 2.18 |
| All Dev Math | 1.96 |
| Dev Math Completed | 2.38 |
| Did Not Complete Dev Math | 1.17 |

## The Effect of Completion of Developmental Courses on Credit Hours Earned

The overall number of credits earned for the 494 members of the Class of 1994 was 32.08. However, like GPA, there were significant differences in numbers of credits earned between those students who enrolled in and completed required developmental courses and those who did not.

**Developmental Reading**

| Group | Hrs |
|---|---|
| All Students | 32.08 |
| Dev Reading Required | 21.75 |
| Dev Reading Completed | 28.58 |
| Dev Reading Not Completed | 8.93 |

**Developmental Writing**

| Group | Hrs |
|---|---|
| All Students | 32.08 |
| Dev Writing Required | 26.28 |
| Dev Writing Completed | 33.17 |
| Dev Writing Not Completed | 4.81 |

**Developmental Math**

| Group | Hrs |
|---|---|
| All Students | 32.08 |
| Dev Math Required | 28.01 |
| Dev Math Completed | 37.39 |
| Dev Math Not Completed | 10.13 |

**The Effect of Completion of Developmental Courses on Successful Transfer**

A total of 136 members of the Class of 1994 had transferred to a four-year college or university by the Fall 1997 semester. There were significant differences in transfer rate among those students enrolled in required developmental courses according to whether the developmental courses were completed or not.

| Status | Number of Transfers |
|---|---|
| All Students | 136 |
| Dev Reading Completed | 11 |
| Dev Reading Not Completed | 3 |
| Dev Writing Completed | 38 |
| Dev Writing Not Completed | 2 |
| Dev Math Completed | 48 |
| Dev Math Not Completed | 7 |

**The Effect of Completion of Developmental Courses on Degree and Certificate Attainment**

A total of 105 of the members of the Class of 1994 earned the AA degree or certificate by May, 1997. There were significant differences in degree or certificate attainment among those students who enrolled in required developmental courses according to whether the developmental courses were completed or not.

| Status | Number of Degrees |
|---|---|
| All Students | 105 |
| Dev Reading Completed | 10 |
| Dev Reading Not Completed | 0 |
| Dev Writing Completed | 23 |
| Dev Writing Not Completed | 0 |
| Dev Math Completed | 33 |
| Dev Math Not Completed | 1 |

**The Effect of Completion of Developmental Courses on Total Number of Semesters of All Grades of F, W, or U**

108 students had at least one semester of all grades of F, W, or U. The following chart shows the frequency of semesters of all grades of F, W, or U according to the enrollment and completion of required developmental courses:

| Status | Number with at least one Semester of all F, W, U |
|---|---|
| All Students | 108 |
| Dev Reading Completed | 15 |
| Dev Reading Not Completed | 20 |
| Dev Writing Completed | 28 |
| Dev Writing Not Completed | 31 |
| Dev Math Completed | 23 |
| Dev Math Not Completed | 44 |

**The Effect of Completion of Developmental Courses on Total Number of Semesters of Academic Probation**

83 students had at least one semester of academic probation, 24 students had at least two semesters. The following chart shows the frequency of semesters of academic probation according to the enrollment and completion of required developmental courses:

| Status | Number with at least one semester of academic probation |
|---|---|
| All Students | 83 |
| Dev Reading Completed | 11 |
| Dev Reading Not Completed | 4 |
| Dev Writing Completed | 25 |
| Dev Writing Not Completed | 11 |
| Dev Math Completed | 17 |
| Dev Math Not Completed | 26 |

**Goal Attainment and Reading, Writing, and Math Assessment**

Two-thirds of the Class of 1994 was required to take at least one developmental course as a result of their performance on the FCC Placement Tests. This number does not include those students passing parts I and II of the Math Placement Test, failing Part III, and then choosing to take a credit math class at a level lower than intermediate algebra. Although this option was discontinued beginning in the Fall 1996 semester, it was the choice of a sizeable portion of students. If the current standards in math were applied to the Class of 1994, 80% would have had a required at least one developmental course in reading, writing, or math.

The following chart shows a comparison of goal attainment and assessment between those students who were not required to any developmental courses and those students who actually enrolled in at least one required developmental course.

| Status | Degree or Certificate | Transfer |
|---|---|---|
| No Developmental Courses Required | 44 | 63 |
| At Least One Developmental Course Required | 61 | 73 |
| **Total** | **105** | **136** |

39% of the class of 1994 did not require any developmental courses (see math disclaimer above). This group accounted for 46% of the AA degrees and certificates awarded and 42% of all successful transfer activity. These differences, however, are not statistically significant. This means there is not a statistically significant difference between the proportion of degrees and certificates and the frequency of successful transfer achieved by the group of students who had no developmental classes required and those who had at least one required and who eventually enrolled in the required class (s).

However, the differences become extreme when measured against developmental course enrollment and completion. The chart below shows the frequency of goal attainment by students who enrolled in but did not complete required developmental courses:

| Status | Degree or Certificate | Transfer |
|---|---|---|
| Did not complete Developmental Reading | 0 | 3 |
| Did not complete Developmental Writing | 0 | 2 |
| Did not complete Developmental Math | 1 | 7 |
| **Total** | **1** | **12** |

Less than 1% (one student) earned the AA degree without having completed the required developmental course (math). There were only 12 instances (10 students - 7%) of successful transfer when required developmental courses were not completed.

## GPA, Total Credits Earned and Goal Attainment

Earlier in this report, the overall GPA and total credits earned for the Class of 1994 were shown to be 2.18 and 32.08. Now that we know that completion of required developmental courses is a strong predictor of retention, persistence, and goal attainment, we can safely factor out the GPA and total credits earned of students who completed required developmental courses from those who did not and get a truer picture of the achievement of students who followed more successful pathways through the College. The chart below shows the average GPA of those students who earned the AA or certificate and/or transferred successfully:

| Status | GPA | Credits Earned |
|---|---|---|
| Earned AA degree or Certificate | 2.98 | 62.79 |
| Transferred Successfully | 2.89 | 48.2 |
| All students | 2.18 | 32.08 |

## The Relationship Between Combinations of Developmental Courses Required and Course Completion

There is a strong relationship between students who enroll in and complete developmental reading and writing. Students who are required to take both developmental reading and writing are significantly more likely to complete both than to complete one and not the other. On the other hand, students who are required to take both developmental reading and writing and fail to complete one are significantly more likely to fail to complete the other. There is a similar significant relationship for students who are required to take developmental writing and developmental mathematics.

There is not a significant relationship in course completion by students required to take both developmental reading and developmental math.

## The Relationship Between Levels of Developmental Courses

When more than one developmental course is required, there is a significant relationship between levels of developmental reading and writing. However, there is no significant relationship between level of reading or writing required and level of developmental mathematics required.

In other words, it is very likely a student who is required to take both reading and writing will take the two courses on the same level. However, when a student is required to take developmental reading or writing and math, it is not possible to accurately predict the level of developmental math required based on the level of developmental reading or writing.

**The Relationship Between Open Campus Attendance and Goal Attainment**

Students who take courses at FCC during their senior year of high school constitute 15% of the Class of 1994. The chart below shows the performance of this group of students as compared to the overall mean in five critical measures:

| Measure | Open Campus | Population Mean or Total |
|---|---|---|
| GPA | 2.53 | 2.18 |
| Total Credits | 41.9 | 32.08 |
| AA or Certificate | 25 | 105 |
| Transferred | 31 | 136 |
| Semesters of all grades F, W, U | 19 | 138 |
| Academic Probation | 12 | 83 |

Students who earned college credits at FCC while in high school and then enrolled as traditional freshmen are more likely to earn the AA degree or certificate or transfer successfully than students from the Class of 1994 who did not. They are, however, just as likely to spend at least one semester on academic probation, or have one semester of grades of all F, W, or U.

**Race and Its Relationship to Developmental Needs and Goal Attainment**

Because of the very small number of students in the Class of 1994 with race codes other then "white," it is not possible to determine significant differences or relationships among variables based on race.

**High School Attended and Its Relationship to Developmental Needs and Goals Attainment**

There are no significant differences or relationships among variables based on high school attended.

**Full-time or Part-time Attendance and Its Relationship to Retention and Persistence**

Earlier College studies on traditional freshmen indicated a possible relationship between full-or part-time status during the first semester of attendance and retention to future semesters. There was speculation at the time that the decision of a traditional freshman to attend part-time his or her first semester in college was an early indication of a weak commitment to college. Many

believe that part-time attendance by this group is an indication of a need to work full-time and possible evidence of a lack of the financial resources to support full-time college attendance.

Since full- and part-time attendance for the Class of 1994 was captured for every semester, it was possible to track students from their initial decision to attend full- or part-time in the Fall 1994 semester through Spring 1997 based on student attendance patterns. The following charts show the full- and part-time ratios for each semester and the retention and persistence patterns for the Class of 1994 based on their full- or part-time attendance status in the Fall 1994 semester:

**Full-time, Part-time Attendance Patterns Fall 1994 to Spring 1997**

| Semester | Full-time | Part-time | Total |
|---|---|---|---|
| Fall 1994 | 409 (83%) | 85 (17%) | 494 |
| Spring 1995 | 336 (82%) | 75 (18%) | 411 |
| Fall 1995 | 262 (81%) | 62 (19%) | 324 |
| Spring 1996 | 232 (83%) | 62 (19%) | 279 |
| Fall 1996 | 105 (66%) | 54 (34%) | 159 |
| Spring 1997 | 72 (56%) | 56 (44%) | 128 |

**Retention and Persistence Rates as a Function of Full-time or Part-time Attendance Choice**

The following charts show the retention and persistence rates for the Class of 1994 as a function of their initial decision to attend full-or part-time in the Fall 1994 semester. The first chart, for example, shows that the one semester retention rate to the Spring 1995 term for students who opted to attend full-time in the Fall 1994 semester was 89% -- for students who chose part-time, it was 58%. Also, of the 362 full-time students who returned for a second semester, 322 (89%) continued as full-time students. Of the 49 part-time students who returned for a second semester, 14 (28%) switched to full-time for the Spring 1995 semester while 35 (72%) continued as part-time.

**One Semester**

| Retention To Spring 1995 | Full-time | Part-time | Total |
|---|---|---|---|
| Fall 1994 - Full-time | 322 | 40 | 362 (89%) |
| Fall 1994 - Part-time | 14 | 35 | 49 (58%) |

**Two Semester**

| Retention To Fall 1995 | Full-time | Part-time | Total |
|---|---|---|---|
| Fall 1994 - Full-time | 245 | 44 | 289 (71%) |
| Fall 1994 - Part-time | 17 | 18 | 35 (41%) |

**Three Semester**

| Retention To Spring 1996 | Full-time | Part-time | Total |
|---|---|---|---|
| Fall 1994 - Full-time | 217 | 36 | 253 (62%) |
| Fall 1994 - Part-time | 15 | 11 | 26 (35%) |

**Four Semester**

| Retention To Fall 1996 | Full-time | Part-time | Total |
|---|---|---|---|
| Fall 1994 - Full-time | 99 | 44 | 143 (35%) |
| Fall 1994 - Part-time | 6 | 10 | 16 (19%) |

**Five Semester**

| Retention To Spring 1997 | Full-time | Part-time | Total |
|---|---|---|---|
| Fall 1994 - Full-time | 64 | 46 | 110 (27%) |
| Fall 1994 - Part-time | 8 | 10 | 18 (21%) |

Of the 409 members of the Class of 1994 who enrolled full-time in the Fall 1994 semester, the two, three, four, and five semester retention and persistence rates were significantly greater than the 85 students who chose to enroll part-time. It is not until the sixth possible semester of attendance, Spring 1997, that the persistence rates are comparable. This occurrence is due, most likely to the majority of persisting full-time students having reached their outcome goal within five semesters of initial attendance.

## Attainment of Outcomes Goals as a Function of Full-time or Part-time Attendance

It is also possible to track students' attainment of certain outcomes measures as a function of the initial decision to attend full- or part-time their first semester in college.

### A.A. Degree or Certificate

| Student Status | AA Degree or Certificate |
|---|---|
| Full-time | 104 |
| Part-time | 1 |
| **Total** | **105** |

### Transfer to Four-year College

| Student Status | Transfer to 4 - Year College |
|---|---|
| Full-time | 128 |
| Part-time | 8 |
| **Total** | **136** |

### Overall GPA

| Student Status | GPA |
|---|---|
| Full-time | 2.34 |
| Part-time | 1.36 |
| Overall | 2.18 |

**EN 101 Grade**

| Student Status | EN 101 GPA |
|---|---|
| Full-time | 2.15 (n=355) |
| Part-time | 1.26 (n=38) |
| Overall | 2.07 (n=393) |

**First Credit Math Course Grade**

| Student Status | Math Course GPA |
|---|---|
| Full-time | 2.10 (n=292) |
| Part-time | 1.50 (n=22) |
| Overall | 2.06 (n=314) |

**First Credit Science Course Grade**

| Student Status | Science Course GPA |
|---|---|
| Full-time | 2.38 (n=226) |
| Part-time | 2.13 (n=15) |
| Overall | 2.37 (n=241) |

**Semesters of Grades of All F, W, or U**

| Student Status | # With at Least One Semester of All F, W, U |
|---|---|
| Full-time | 95 (69%) |
| Part-time | 43 (31%) |
| Overall | 138 |

**Semesters on Academic Probation**

| Student Status | # With at Least One Semester on Academic Probation |
|---|---|
| Full-time | 66 (80%) |
| Part-time | 17 (20%) |
| Overall | 83 |

**Discussion**

One of the more enduring criticisms of the community college came from Clark (1960), who termed the tendency of community colleges to shunt lower-achieving students away from the baccalaureate track as "the cooling out function." This function, seen by some at the time as a means for preserving the socio-economic status quo by the educational bureaucracy, directed students who could not demonstrate academic readiness first into remedial courses and then into lower-level technical and semi-professional occupations. Remedial educators and counselors were seen as "gate-keepers" whose job it was to help lower the expectations of students with limited academic abilities and critical thinking skills. In this way, the integrity of the baccalaureate (transfer) track was maintained by passing on to the four-year colleges only those students who had a reasonable chance to graduate and, thus, preserve the worthiness of the community college liberal arts curriculum. In doing this, the critics contended, community colleges insured that those who fell off the baccalaureate track would never rise beyond the social class of their parents.

In 1980, Clark re-examined "the cooling out function" in a monograph entitled "Questioning the Community College Role." Twenty years after his original thesis, Clark found "the cooling out function" alive and well in community colleges. However, he saw its application in much less conspiratorial terms. In fact, as he viewed the complex educational, sociological, and economic landscape that had evolved throughout the nation in the ensuing generation, he declared that the "... cooling out process is one of the possible compromises, perhaps even a necessary one." He acknowledged the difficult challenges faced by community colleges and the admirable progress made in remedial education and career programs and concluded by admitting that, "... if we don't do it (educate the non-baccalaureate track student), who will?"

Indeed. As we near the end of a second generation of evolution in the community college since Clark's initial supposition, his premise is never more true, and never more false. Since 1960, nationwide enrollment in community colleges has grown exponentially with dramatic changes occurring in the nature of its student body. An unrelenting wave of returning adults, minorities of all racial and ethnic categories, immigrant populations in need of English language training, younger students unable to meet the rising costs and more selective admission criteria of four-year institutions, and displaced homemakers and workers coming for re-training have filled the nation's two-year college classrooms.

Community colleges have been given more responsibility by Federal and state educational and economic planners to bring about the kind of workforce development that will allow the nation to compete on a global scale. Each year more partnerships are forged between businesses, industry, and community colleges to facilitate the movement of previously under-represented populations into technical careers. While community colleges have enthusiastically taken on the role of provider for the bulk of the nation's technically-trained workers, high school graduates' academic skills have continued to fall, especially in some urban and rural areas, to sub-literacy levels.

When viewed against this backdrop of dynamic change, the experiences of the Class of 1994 at

FCC seem more reflective of Clark's view of the community college in 1960 than the latter part of the 1990's. While three-fourths of our freshmen, when completing their application for admission, indicate "transfer to a four-year college" as their primary reason for attending, fewer than one-third actually achieve this goal within three years. Although extensive assessment and remediation opportunities were afforded to the overwhelming majority of students, only those with the fewest areas in need of remediation and with the shortest distance to go to achieve academic readiness seemed to cross onto the baccalaureate track.

However, in a departure from Clark's model, very few of FCC's non-baccalaureate track students switch into "career" programs. In fact, less than 2% complete career degrees. At FCC, a student unable to break into the full baccalaureate track is far more likely to leave the college without having achieved *any* outcome goal than switch to a "career track." In fact, nearly one-half will have left the college by the start of the fourth semester of attendance.

While the traditional measurable outcomes goals of the community college have included attainment of the AA degree, the certificate, and successful transfer, in recent years other goals not previously regarded as legitimate outcomes have been offered as measures of student success. For example, for some students with severe learning or physical disabilities or for those entering at the sub-literacy level, achieving a semblance of personal independence might be a realistic outcomes goal. For those enrolling with limited or no English language proficiency, attaining sufficient language skills to become employable might be a reasonable outcomes goal. For those graduating from high school with no marketable job skills, obtaining basic word processing and office skills might be an immediate outcomes goal. The fact remains, though, that the attainment of these goals, as important as they may seem, take the student to a level generally considered to be no higher than that of the "average" high school graduate. The attainment of these goals, frequently offered as reasonable outcomes for some students, are not traditionally measured as justifiable outcomes of college attendance and are difficult to support in a collegiate environment.

This study shows that for a sizeable majority of traditional freshmen who enroll at FCC in the Fall semester immediately following their high school graduation, college attendance does not lead to a traditional measurable outcome. It also shows that for four out of five freshmen, the single most important factor in the achievement of a successful measurable outcome (graduation, transfer, credits earned, GPA) is enrollment and completion of required developmental courses. For those who do not enroll in required developmental courses, or for those who enroll but do not successfully complete required developmental courses, their stay at FCC is usually short and unsuccessful. On the other hand, students showing college readiness upon enrollment find few obstacles to the achievement of measurable outcomes goals.

Most disturbing, though, is the relatively common occurrence of the semester of all grades of "F," "W," or "U". The incidence of unsuccessful semesters is not dependent, as some might hypothesize, on developmental status. This phenomenon, which has a number of probable negative effects on students' outcomes goals (loss of credit, decline in GPA, increase in total semesters of attendance, deferment of outcome goal, loss of educational investment, loss of

confidence or self-esteem) is as common an experience for our freshmen as is graduation or successful transfer.

The data in this study suggest a number of strategies that may result in greater outcomes goal attainment, higher rates of retention and persistence, and, overall, more successful college experiences for traditional freshmen.

It is clear now that the key factor in a wide range of successful outcomes measures for traditional freshmen is enrollment and successful completion of required developmental courses. Without successfully clearing this first hurdle, virtually all legitimate college outcomes are out of reach for most students. While some students continue to attend without making progress in developmental courses, virtually none accomplish any measurable goal. Those who fail to remediate academic deficiencies simply disengage from the college either by dropping out, failing their courses, or reducing their course load to fewer classes. Since more than 80% of our incoming freshmen require at least one developmental course and 65% require two, if we are to improve this important student segment's chances for achieving measurable outcomes goals, we need to first find ways to improve their success rates in developmental courses.

We also know that there are differential rates of success for traditional freshmen in the three developmental disciplines. Students are most successful in writing, least successful in mathematics. We know that there is a strong relationship between success in one developmental course and another. Conversely, we know there is a strong relationship between failing one developmental course and failing another.

The data in this study also suggest that if we are to change the rate of student success by traditional freshmen on the major outcomes measures cited here, we must make an impact on the students who are at the highest risk of disengagement within their *first year* of attendance, preferably their *first semester*. We cannot forget that one-third will not return for a second year and nearly one-half will be gone by the start of the fourth semester. One-half of all occurrences of semesters of all grades of "F," "W," or "U" occur in the *first semester* of attendance.

There is evidence that, in addition to developmental status, the choices made by students upon application and first enrollment are clues for future success on measurable outcomes goals. Students who select curriculums other than general studies, business administration, or teacher education and students who elect to attend part-time their first semester are at a significantly higher risk to fail to reach measurable outcomes goals.

This study should dispel the notion that traditional freshman at FCC are engaged in our career programs in any significant or meaningful way. Only 2% of the Class of 1994 (10 students) earned a degree or certificate in one of the college's career programs within three years of enrollment even though 18% (89 students) had selected one of the A.A.S. or certificate programs upon application and initial enrollment. Only one student had earned a certificate in *any* program. Of 17 students indicating Nursing (RN) as their intended career and curriculum, only

2 had earned the Nursing A.S. three years later. Of six students indicating one of the Office Technology options, only one earned a degree or certificate. *No* member of the class of 1994 earned a degree or certificate in Accounting, Aviation, Banking and Financial Management, Biology Lab Tech, Construction Management, Drafting, Electronics, Information Processing, or Legal Assisting.

There are undoubtedly a number of factors beyond the scope of this study that may affect the success of traditional-age community college students and may require further study. For example:

- What is the impact on the retention and degree attainment of 18 - 21 year old community college students when the availability of local service employment is at record levels?
- What is the effect of increases in tuition and the availability of financial aid on students in need of significant developmental courses?
- What is the effect of off-campus, part-time employment in excess of 20 hours per week on full-time traditional-age community college students?
- What is the effect of drug and alcohol abuse on achievement and retention? (Frederick County high school seniors exceed the State average in self-reported binge drinking and illegal drug use.)
- What is the relationship between "connectivity" with the college community (work study, mentoring, student activities, internships, community service) and student success?

At a time when the workforce needs of the region are exceeding the supply of sufficiently-trained workers, it appears that there is a population of 18 - 22 year-olds in Frederick County who have disengaged from college who could be a ready source for additional skill training leading to meaningful careers. It is paradoxical that when these students *were* engaged in higher education, they were *not* involved in the kinds of programs that would have allowed them to take advantage of these new career opportunities -- or if they were, they left the college before earning a credential in the desired program. It may be that a majority of our traditional freshmen would be better served by an alternative form of higher education -- one not currently available at FCC.